

## CLAIMS

1. A nerve regeneration accelerator, which comprises a fatty acid compound excluding retinoic acid and a prostaglandin compound, a salt thereof or a prodrug thereof.

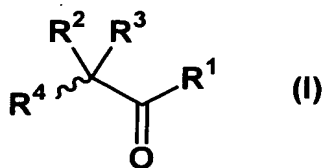
2. The nerve regeneration accelerator according to claim 1, wherein the fatty acid compound is an unsaturated fatty acid compound.

3. The nerve regeneration accelerator according to claim 1, wherein the fatty acid compound is a saturated fatty acid compound.

4. The nerve regeneration accelerator according to claim 1, wherein the fatty acid compound is a branched chain fatty acid compound.

5. The nerve regeneration accelerator according to claim 1, wherein the fatty acid compound is a linear or branched chain fatty acid compound having from 4 to 20 carbon atoms.

6. The nerve regeneration accelerator according to claim 1, wherein the fatty acid compound is represented by formula (I):



wherein R<sup>1</sup> represents hydroxyl; R<sup>2</sup> and R<sup>3</sup> each independently represents (a) hydrogen, (b) chlorine, (c) C3-10 alkyl, (d) C3-10 alkenyl, (e) C2-10 alkoxy, (f) C2-10 alkylthio,

(g) C3-7 cycloalkyl, (h) phenyl, (i) phenoxy, (j) (C2-10 alkyl substituted with one or two chlorine atom(s))-CH<sub>2</sub>-, (k) (C1-5 alkyl substituted with one or two substituent(s) selected from C1-4 alkoxy, C3-7 cycloalkyl, phenyl and phenoxy)-CH<sub>2</sub>-, (l) (C1-10 alkyl in which one carbon atom is substituted with 1 to 3 fluorine atom(s))-CH<sub>2</sub>-, or (m) oxidized C3-10 alkyl, or R<sup>2</sup> and R<sup>3</sup> are taken together to represent C3-10 alkylidene; and R<sup>4</sup> represents C2-3 alkyl or oxidized C2-3 alkyl.

7. The nerve regeneration accelerator according to claim 6, wherein the fatty acid compound is (1) 2-propyloctanoic acid, (2) (2R)-2-propyloctanoic acid, (3) (2S)-2-propyloctanoic acid, (4) 2-propylpentanoic acid, (5) (2R)-7-oxo-2-propyloctanoic acid, (6) (2R,7R)-7-hydroxyl-2-propyloctanoic acid, (7) (2R,7S)-7-hydroxyl-2-propyloctanoic acid, or (8) (2R)-8-hydroxyl-2-propyloctanoic acid.

8. The nerve regeneration accelerator according to claim 7, wherein the fatty acid compound is (2R)-2-propyloctanoic acid.

9. The nerve regeneration accelerator according to any one of claims 1 to 8, which is a nerve tissue regenerator or a neural function regenerator.

10. The nerve regeneration accelerator according to any one of claims 1 to 8, which is an accelerating agent for grafting, differentiating, proliferating and/or maturing a stem cell, a nerve precursor cell or a nerve cell.

11. The nerve regeneration accelerator according to claim 10, wherein the stem cell is an embryonic stem cell, a myeloid stem cell or a nerve stem cell.

12. The nerve regeneration accelerator according to claim 10, wherein the stem cell, the nerve precursor cell or the nerve cell is an endogenous cell.

13. The nerve regeneration accelerator according to claim 10, wherein the stem cell, the nerve precursor cell or the nerve cell is a transplant cell.

14. The nerve regeneration accelerator according to any one of claims 1 to 8, which induces a nerve cell from a mesenchymal cell, a bone marrow stromal cell or a glia cell.

15. The nerve regeneration accelerator according to claim 14, wherein the glia cell is an astrocyte.

16. The nerve regeneration accelerator according to any one of claims 1 to 8, wherein the nerve is a central nerve or a peripheral nerve.

17. The nerve regeneration accelerator according to claim 16, wherein the central nerve is a cerebral nerve, a spinal nerve or an optic nerve.

18. The nerve regeneration accelerator according to claim 16, wherein the peripheral nerve is a motor nerve or a sensory nerve.

19. The nerve regeneration accelerator according to any one of claims 1 to 8, which is used for culture of a nerve stem cell for transplant, a nerve precursor cell for transplant or a nerve cell for transplant.

20. The nerve regeneration accelerator according to any one of claims 1 to 8, which is a neurotrophic factor-like agent.

21. A method for accelerating nerve regeneration in a mammal, which comprises administering to a mammal an effective amount of the compound described in any one of claims 1 to 8, a salt thereof or a prodrug thereof.

22. A method for culturing a cell for transplant, which comprises adding an effective amount of the compound described in any one of claims 1 to 8, a salt thereof or a prodrug thereof to a medium comprising a nerve stem cell for transplant, a nerve precursor cell for transplant or a nerve cell for transplant.

23. Use of the compound described in any one of claims 1 to 8, a salt thereof or a prodrug thereof for the manufacture of a nerve regeneration agent.

24. Use of the compound described in any one of claims 1 to 8, a salt thereof or a prodrug thereof for the manufacture of an additive agent for culture of a nerve stem cell for transplant, a nerve precursor cell for transplant or a nerve cell for transplant.

25. A medicament which comprises a combination of the compound described in any one of claims 1 to 8, a salt thereof or a prodrug thereof with at least one selected from an acetylcholine esterase inhibitor, a nicotinic receptor regulator, a  $\beta$  secretase inhibitor, a  $\gamma$  secretase inhibitor, a  $\beta$  amyloid protein aggregation inhibitor, a  $\beta$  amyloid vaccine, a  $\beta$  amyloid protease, a brain function activator, a dopamine receptor agonist, a monoamine oxidase inhibitor, an anticholinergic drug, a catechol-O-methyltransferase inhibitor, a drug for treating amyotrophic lateral sclerosis, a drug for

treating hyperlipidemia, a drug for treating abnormal behavior and/or poriomania accompanied with progress of dementia, an apoptosis inhibitor, a drug for accelerating nerve differentiation and/or regeneration, an antihypertensive drug, a drug for treating diabetes, an antidepressant drug, an antianxiety drug, a nonsteroidal anti-inflammatory drug, a disease modifying antirheumatic drug, a TNF inhibitor, a MAP kinase inhibitor, a steroid drug, a sex hormone derivative, parathyroid hormone and a calcium acceptor antagonist.